

# WASHINGTON STATE DEPARTMENT OF COMMERCE

## **Strategic Plan for Homes, Buildings, Neighborhoods and Districts**

## **Introduction to the Strategic Plan and Public Process**

**Chuck Murray**

**4/11/2010**



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# Enabling Legislation / Building Code Council

- **19.27A.160**

Residential and nonresidential construction Energy consumption reduction Council report.

- (1) Except as provided in subsection (2) of this section, residential and nonresidential construction permitted under the **2031 state energy code must achieve a seventy percent reduction in annual net energy consumption,** using the adopted 2006 Washington state energy code as a baseline.

# Buildings Strategic Planning Goals

- Targets RCW 19.27a.160
  - The goal is defined by the legislation
  - 70% reduction in building energy use by 2030
- Strategic Planning RCW 19.27a.150
  - The strategic plan is to be developed in support of the legislated goal
  - The strategic plan should identify barriers to reaching the goal and a plan to address the barriers

# Enabling Legislation / Building Code Council

- 19.27A.160

2) The council shall adopt state energy codes from 2013 through 2031 that incrementally move towards achieving the seventy percent reduction in annual net energy consumption as specified in subsection (1) of this section. The council shall report its progress by December 31, 2012, and every three years thereafter.

# Enabling Legislation / Building Code Council

- 19.27A.160

2) The council shall adopt state energy codes from 2013 through 2031 that incrementally move towards achieving the seventy percent reduction in annual net energy consumption as specified in subsection (1). Each code cycle, the target for energy reduction would be about 8%.

# Enabling Legislation / Building Code Council

- **19.27A.160**  
2) cont.
- If the council determines that economic, technological, or process factors would significantly impede adoption of or compliance with this subsection, the council may defer the implementation of the proposed energy code update and shall report its findings to the legislature by December 31st of the year prior to the year in which those codes would otherwise be enacted.

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# Legislative Direction

- (a) aspirational codes
- (b) measurement and targets
- (c) code training and enforcement
- (d) research / demonstration
- (d,e,i) education
- (f) utility impacts / serving low energy buildings
- (g) Performance based codes
- (h) financial mechanisms
- (j) district energy
- (k) cost / benefit
- (l) embodied energy

# Commerce Strategic Plan

- 19.27A.150 Strategic plan — Development and implementation.
- department shall develop and implement a strategic plan for enhancing energy efficiency in and reducing greenhouse gas emissions from homes, buildings, districts, and neighborhoods



# Repeat Every Three Years

- The buildings strategic plan will be repeated every three years
- Commerce approach for 2010
  - Address near term issues in detail
  - Identify mid term issues and plan to address them in the next few years
  - Describe long term opportunities / barriers

# Develop and Implement a Strategic Plan

- We can not plan and implement all the sections this year
- This will be an ongoing project
- 2010 Mostly Planning
  - Report to the Legislature
- Implementation
  - Ongoing

# 2010 - Three Phases

- Informative Phase, May – July
  - Provide context for discussion
  - Solicit public input on subject mater
- Assembly Phase, Aug, Sept.
  - Write Draft Document
  - Continue to gather information, but no meetings
- Public Review / Final Draft, Oct.
  - Provide opportunities for comment on first public draft in October
  - Incorporate comments and publish
  - Due to Governor's office early November for final review

# Qualifying Criteria?

*What get's in the plan?*

- Is it a idea that is ready to be applied near term, or does it need more development?
- Capacity - willing public / private collaborative that will adequately address the issue
- Will this enhance future code council rulemaking
- Will this help solve technologically and economically feasibility issues

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# Using the Reference Building Models for the Standard 90.1-2010 Development

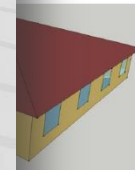
Michael Rosenberg, C.E.M. LEED AP

Bing Liu, P.E., C.E.M. LEED AP

Pacific Northwest National Laboratory

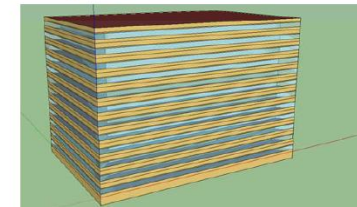


types



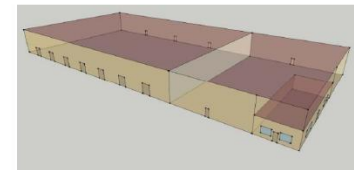
| Floors | Aspect Ratio | WWR |
|--------|--------------|-----|
|        | 1.5          | 15% |

Large Office

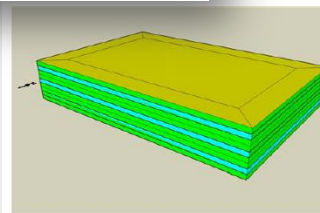


| Floor area (ft <sup>2</sup> ) | Number of Floors      | Aspect Ratio | WWR |
|-------------------------------|-----------------------|--------------|-----|
| 498,600                       | 12<br>(plus basement) | 1.5          | 40% |

**1** Warehouse Prototype  
Non-refrigerated warehouse



| Floor area (ft <sup>2</sup> ) | Number of Floors | Aspect Ratio | WWR  |
|-------------------------------|------------------|--------------|--|
| 49,500                        | 1                | 2.2          | Office area: 12%<br>Storage Area: 0%<br>Overall: 0.71% |



| Floor area (ft <sup>2</sup> ) | Number of Floors | Aspect Ratio | WWR |
|-------------------------------|------------------|--------------|-----|
| 53,600                        | 3                | 1.5          | 33% |

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# Performance-Based Energy Codes

**Jayson Antonoff** Seattle DPD Policy Advisor

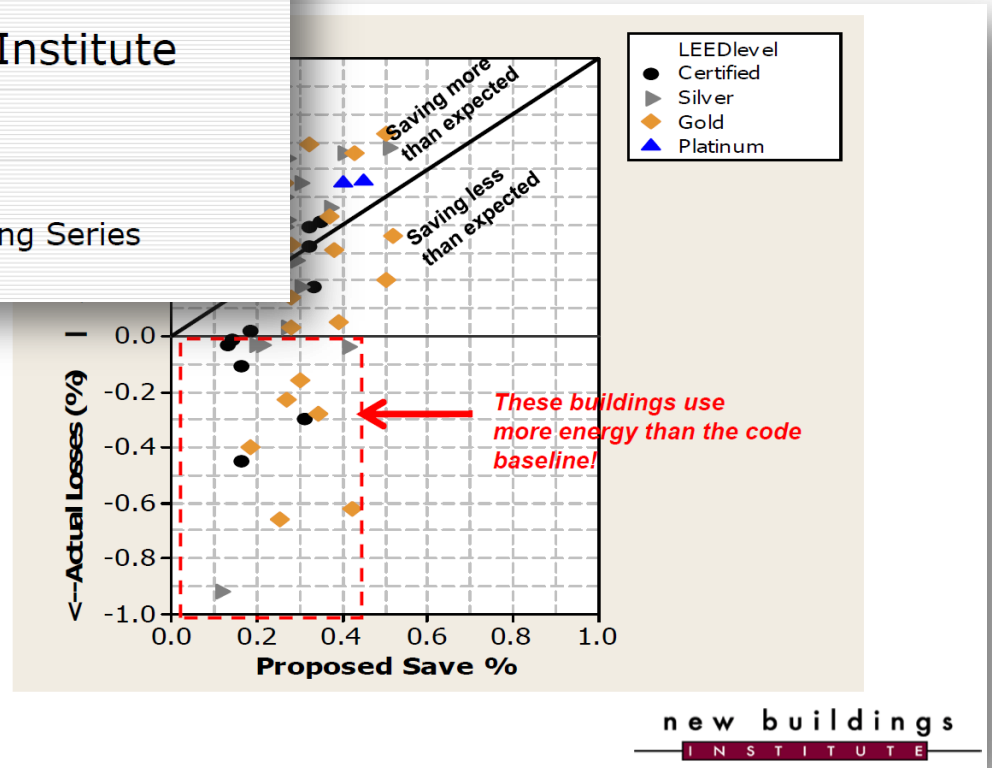
**Duane Jonlin** AIA, NBBJ

- with Special Guest -

**Mark Cherniack** New Buildings Institute

June 2010

Washington State Energy Use Strategic Planning Series



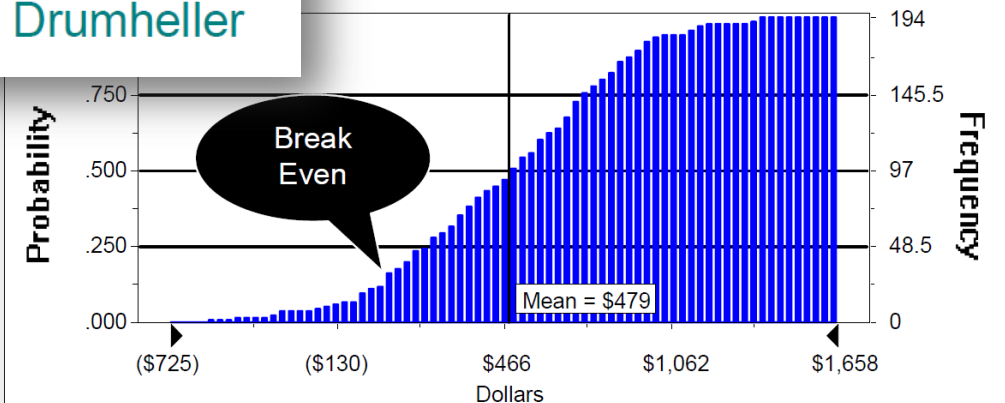
# Strategic Plan for Buildings

## Construction Cost Analysis Methodology

Craig Drumheller

### Results From Economic Probability for Res. Windows

Probability of the Net Present Value to  
Consumers of Class 30 Windows



slide 17

Strategic Plan for Homes, Buildings,  
Neighborhoods and Districts

# Aspirational Codes

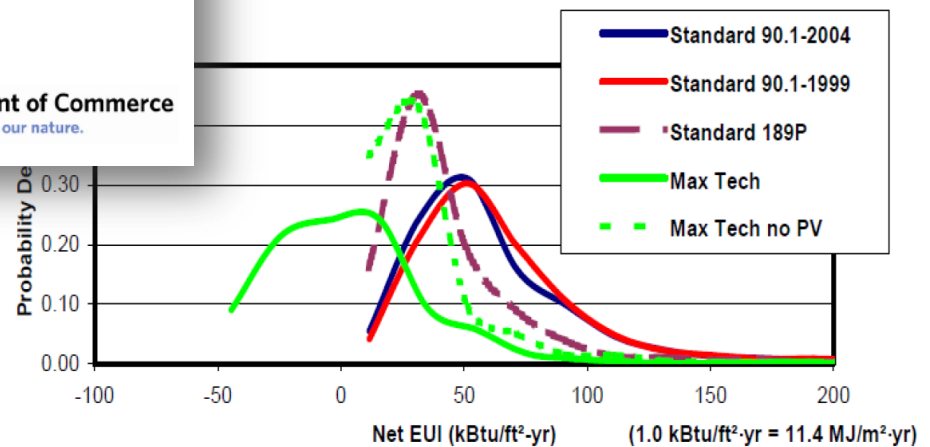
May 18, 2010



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## Moving the Curve

Assuming no new technology (2002-2007)



Assessment of the Technical Potential for Achieving Net Zero-Energy Buildings in the Commercial Sector

B. Griffith, N. Long, P. Torcellini, and R. Judkoff

National Renewable Energy Laboratory

D. Crawley and J. Ryan

U.S. Department of Energy

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# Two Strategies

- Two energy strategies are currently under development at Commerce
  - This one is the Buildings Strategy
    - <http://www.commerce.wa.gov/site/1325/default.aspx>
  - State Energy Strategy
    - <http://www.commerce.wa.gov/site/1327/default.aspx>